JULY, MDCCCLV.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CLIII.

LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.

Price ONE SHILLING.

E. NEWMAN, 9, DEVONSHIRE STREET.

THE BRITISH FERNS

REPRESENTED

IN A SERIES OF PHOTOGRAPHS FROM NATURE,

BY

MRS. GLAISHER,

FROM SPECIMENS SELECTED BY MR. NEWMAN.

To each Plate will be appended, in Chronological Order, the name applied to the Species in Sir J. E. Smith's 'English Flora,' Hooker and Arnott's 'British Flora,' Mr. Babington's 'Manual of British Botany,' and Mr. Newman's 'History of British Ferns;' so that it will be, in fact, a necessary companion to all our standard Botanical Works.

The process of Photography is admirably adapted to making faithful copies of Botanical Specimens, more especially to illustrating the graceful and beautiful class of Ferns: it possesses the advantage over all others hitherto employed of displaying, with incomparable exactness, the most minute characters; producing absolute *fac-similes* of the objects, perfect both in artistic effect and structural details.

The figures will of course be exactly the natural size, and the price of the entire Series will not exceed Four Guineas. Specimens may be inspected at Mr. Newman's, 9, Devonshire Street, Bishopsgate, any day between the hours of Two and Four.

Singular State of a living Helops.—The power that insects and other creatures of the same height in the scale of being possess of existing, with little apparent inconvenience, under circumstances that would at once be fatal to any of the higher orders, is so well known that, generally speaking, such cases are perhaps little worth recording. The following is, I think, however, sufficiently remarkable to be mentioned:—Four or five years ago, in investigating a hollow tree, in the park here, which had often repaid my trouble, I noticed something singular in the appearance of a specimen of Helops striatus, and, having secured it, found a small portion of one elytron was broken away, and every vestige of the contents of the abdomen cleared. This could not have been the result of any sudden crush or other accident, but must apparently have been the work of ants, or something else of similar propensities, as the insect was otherwise uninjured, yet, notwithstanding its condition—hollow as a lantern—it was crawling about nearly as actively as if in its natural state: probably it had been thus some time, for the ants, or whatever they were, must have consumed time as well as the hapless insect's interior. I have the specimen now pinned through the thorax, the only available *point-d'appui*, with the label, "Found in this state alive and active." Poor Helops: dull as his feelings might be, he must have been conscious of a void within which nothing could supply.—*George Guyon; Richmond, Surrey, April* 18, 1855.

Egg and Young Larva of Crymodes Templi.—For a long time I have believed that the eggs of this highly interesting insect were not deposited until the spring, a supposition which has been confirmed, as far as individual observation goes. On the breaking up of the frost I succeeded in finding a fine, perfect female: on the 16th of March she began to deposit her eggs, and continued laying until near the 30th, when she died. The eggs appeared of small size, in proportion to the moth, and were so firmly glued to the box that I could not detach them, otherwise I would have sent some to be engraved for the 'Zoologist,' as I think they would have possessed much interest for its readers. The following particulars of the egg may be noticed:—From the equator to the crown rose about thirty very prominent ribs, meeting in a point; in fact, arranged precisely as the meridians on a globe: the colour, when the egg was first deposited was a light orange, but in about a fortnight the equatorial region assumed a most beautiful purple hue, which gradually faded upwards towards the crown: near the time of hatching both the orange and purple colours vanished entirely, giving place to a uniform chocolate-brown. They began to hatch about the 24th of April, and more than three hundred larvæ have appeared: I gave them every kind of food I could think of, but without success: one or two ate slightly of ragwort and yarrow, but not sufficient to keep them alive. The head of the larva is remarkably large, in proportion to the size of the body, and quite black: the body is green and perfectly smooth.—*Job Johnson; Denby Parsonage, near Huddersfield, May* 19, 1855.

PROCEEDINGS OF SOCIETIES.

SOCIETY OF BRITISH ENTOMOLOGISTS.

BRITISH MUSEUM

April 18, 1855.—Mr. HARDING, President, in the chair.

Multitudes of dead Flies on a panicle of Grass.

Mr. Miller exhibited the panicle of a common grass, to the blossoms of which were attached numbers of a species of Dipterous insect; and remarked that while at Darenth

Wood, on the 19th of August last, his attention was drawn to the grass by observing the insects attached in great numbers to its blossoms, and perfectly lifeless: in no instance could he observe a living specimen; and he added that while the heads of the grass were thickly covered with the dead insects, the surrounding herbage, with but few exceptions, was entirely free.

Mr. Harding stated that he was with Mr. Miller on the above occasion, and was greatly astonished at the thousands of dead specimens that covered every panicle of grass: he considered the mortality was due to atmospheric influence, and read some extracts bearing upon the subject from the seventh volume of Loudon's 'Magazine of Natural History.'

Mr. Jobson suggested that probably they had been feeding upon some plant of a poisonous nature.

Mr. Harding differed from this opinion, remarking that, if this were the case, such a circumstance would be of common occurrence, whereas he had not, during his experience, noted a similar instance.

Mr. Miller thought they had been attracted by some glutinous secretion of the blossoms, from which they had been unable to detach themselves, and had thus been starved to death, for, on examination, he found them to be firmly attached by the proboscis, and requiring some slight degree of force to remove them.

Offensive Fluid emitted by Melasoma Populi.

Mr. Miller also stated that while in the same locality, at a later period of the year, he observed a number of larvæ of Melasoma Populi, from the sides of which, on the slightest noise or on being touched, a white exudation took place, which gave out a very disagreeable odour, but was withdrawn on the danger passing away.

Habits and Food of Tineidæ.

Mr. Miller exhibited some mined leaves of a Geum, which Mr. Stainton informed him he suspected were caused by the larvæ of Nepticula aurella, and that similar mines had been observed in the leaves of Fragaria vesca and other plants, which were most probably referrible to this species: also larvæ of Elachista rufocinerea, E. atricomella, Solenobia inconspicuella, Gelechia tricolorella, &c.; remarking of the former, that although abundant, up to the spring of last year all attempts to discover the larvæ had failed, when it was observed mining the leaves of Holcus mollis.

Natural History of the Tortricidæ.

Messrs. Harding and Miller intimated their intention to investigate, during the present season, the habits and transformations of the Tortricidæ, so as to elucidate, as far as possible, the natural history of this interesting family, and intimated that any information upon this subject from friends or Members of the Society, accompanied, when practicable, by the larva, would be highly useful and esteemed.

May 1, 1855.—Mr. HARDING, President, in the chair.

Captures of rare Lepidoptera.

Mr. Harding exhibited a box of beautiful insects, among which were Tæniocampa munda, some remarkable varieties of T. instabilis, specimens of Notodonta dodonea, several specimens of Cloantha conspicillaris, bred from the egg, specimens of Ennomos illustraria, Aleucis pictaria, and several other species: he likewise exhibited some larvæ of Coleophora solitariella, feeding on Stellaria holostea, and the larva of Elachista Staintoni, on the leaves of Helianthemum vulgare.

Larva of Polyommatus Agestis.

Mr. Harding observed that, in his 'Entomological Botany' (Zool. 4681), Mr. Stainton expresses some doubt as to the Erodium being the food of Polyommatus Agestis; but, for the last three years, he (Mr. H.) had taken the larvæ of this insect feeding on this plant, and had bred them: he should feel great pleasure, if he met with it again, in sending the larva to any entomologist who may wish to have it.

Galls of Cynips Rosæ.

Mr. Harding also exhibited a number of the cocoons of Cynips Rosæ, forming several large masses, on the stem of a wild-rose twig: many of the insects were emerging from the cocoons.—*J. T. N.*

ENTOMOLOGICAL SOCIETY.

May 7, 1855.—JOHN CURTIS, Esq., President, in the chair.

Donations.

The following donations were announced, and thanks ordered to be given to the donors:—'Proceedings of the Royal Society,' Vol. vii. No. 11; by the Society. The 'Athenæum' for March and April; by the Editor. The 'Literary Gazette' for April; by the Editor. The 'Zoologist' for May; by the Editor. 'List of Specimens of Lepidopterous Insects in the Collection of the British Museum,' Part ii., Lepidoptera-Heterocera; by F. Walker, Esq. 'A List of the British Species of Geodephaga intended for marking Desiderata and Labelling Collections, taken from Mr. Dawson's Geodephaga Britannica,' by G. Guyon; two copies, by the Author. 'Annales de la Société Entomologique de France,' 3me Série, Tome ii., 4me Trimestre; by the Society. 'Verhandlungen des Zoologisch-Botanischen Vereins in Wien,' Band iii. 1853, Band iv. 1854; by the Society. 'Entomologische Zeitung' for March and April, 1855; by the Entomological Society of Stettin. Trachodes hispidus, one specimen; by F. Plant, Esq., of Leicester. Trachodes hispidus, one specimen; Lina ænea, two specimens; Callistus lunatus, two specimens; by F. Bates, Esq., of Leicester.

Exhibitions.

Mr. Crewe exhibited two specimens of Notodonta cucullina bred from the eggs.

Mr. Stevens exhibited six specimens of Notodonta carmelita reared from the eggs; also five specimens of Aleucis pictaria, taken within the last week at Dartford Heath.

Mr. Foxcroft sent for exhibition three specimens of Endromis versicolor, taken by him in the birch wood, Fincastle, Perthshire, on the 18th of April.

The Rev. W. H. Hawker exhibited a specimen of the very rare Cloantha perspicillaris, taken in a spider's web at Ashford, Hants; and two specimens of Argynnis Lathonia, captured in that locality.

Mr. Stevens exhibited a Dicranocephala, taken in China by Mr. Fortune, which was thought to be distinct from D. Wallichii.

Mr. Newman exhibited three species of the Australian genus Deretaphrus, described in the Appendix to the 'Zoologist,' p. 207, all of them remarkable for the excavation in the prothorax, from which the genus received its name: he added that an admirable description and summary of the characters of this curious genus, from the pen of that accomplished Coleopterist, Mr. Wollaston, was prefixed to the descriptions of the species.

Mr. Newman also exhibited two beautiful specimens of that rare Australian beetle, the Diphyllocera gemellata of Westwood, admirably described and figured in our 'Transactions,' vol. i. p. 214, and tab. xxii. fig. 1. They have been most obligingly placed in Mr. Newman's hands by Mr. James Gibbon, together with an immense number of rarities and novelties collected by himself at Moreton Bay.

Mr. Newman also exhibited the unique specimen of Dohrnia miranda, one of the Australian Œdemeridæ, described by him at p. 133 of the Appendix to the 'Zoologist:' he wished particularly to invite attention to the perfectly anomalous structure of the antennæ of this insect.

Remarkable variety of Cynthia Cardui.

Mr. Newman also exhibited a specimen of Cynthia Cardui, showing a remarkable aberration from the normal colouring: it was taken on the 8th of September, 1851, at St. Lawrence, in the Isle of Wight, by Mr. George Ingall, who most obligingly placed it in Mr. Newman's hands, and enabled him to draw up the following brief description, which appeared at the time at p. 3304 of the 'Zoologist,' but the insect never having been exhibited to the Society, Mr. Newman thought it might be interesting:—

"*Upper side: fore wings.*—In examples of Cynthia Cardui in its normal state, the entire apical area is of a deep brown colour, approaching to black, and adorned with certain white markings, the chief of which is a large oblong white blotch, situated at about two-thirds of the costal margin, to which its upper extremity is closely approximate; beyond this are four subrotund white spots disposed in an irregular series, the first and fourth being considerably larger than those which are intermediate, and again, beyond these, and still nearer the apex of the wing, is a sinuous series of five slender white lunules: in the aberrant example the large white mark, as well as the lunules, are entirely absent; the four subrotund spots are present, but altered in form, and having indistinct and suffused limits: the lowest of the four is increased to treble its normal dimensions, and united to an equally large and similarly shaped white spot in the adjoining areolet, and again, in the next areolet, *i.e.*, the one still nearer the anal angle of the wing, is still another smaller round white spot: in normal specimens the fulvous discoidal area is blotched with very dark amorphous patches, in the aberrant example these are entirely absent, the discoidal area being uninterruptedly fulvous: in the normal state the black border of the anal portion of the external margin is of an intense dark brown, in the aberrant example it is much paler, and increased to double its usual width. *Upper side: hind wings.*—In normal examples of this species there is an interrupted band of dark brown markings across the discoidal area; nearer the exterior margin is a series of five round black spots, one in each of the open areolets, with the exception of that nearest the anus; again, beyond this is a series of six elongate black lunules, one in each open areolet: in the abnormal example, all these markings are absent but nearly on the site of the five round black spots are five round pure white spots, of which that nearest the anal angle has an indistinct brown ocellus. The black marginal markings which, in the normal state, have been described as hastate, are in the aberrant example suffused and considerably altered in appearance. *Under side.*—This partakes, in a great degree, of all the remarkable aberrations noticeable on the upper side, but, in addition, the entire under surface has a washed or suffused appearance, all the distinctness or sharpness, so to speak, of the usual exquisitely beautiful marbled markings being obliterated."

Athous campyloides.

Mr. Newman also exhibited the three specimens of Athous campyloides taken by that indefatigable collector, the late Mr. Robert Foster, on the blossoms of elder, at Ramsgate, and described at p. 509 of the first volume of the 'Entomological Magazine.' Mr. Newman had lately submitted the specimens to the critical examination of Mr. Janson, and he believed no one understood our British Elateridæ so thoroughly, and Mr. Janson pronounced the species to be perfectly distinct from any other British Elater with which he was acquainted. The specimens are two males and one female; they differ considerably in size and colour, but evidently belong to the same species. Mr. Newman remarked that the time and locality were very inviting to out-of-door entomologists, and he hoped to incite some of his brethren of the net to a further search: the species, he observed, was probably Continental, as well as insular, but he knew of no other description than the one to which he had alluded. He added that, since he had been in the room, Mr. Dawson had shown him a specimen taken also at Ramsgate.

Death of Dr. De Haan.

The Secretary announced that the Council had been informed of the death of Dr. De Haan, one of the Honorary Members of the Society, at the age of fifty-four years.

Election of Members.

The following gentlemen were balloted for and elected Members of the Society:—Henry Ansell, Esq., Tottenham; John Matthew Jones, Esq., Welshpool; and Joseph Baly, Esq., Kentish Town.

Saturnia Ricini.

Mr. Douglas called the attention of the Society to the note by Dr. Boisduval, in the 'Annales' of the Entomological Society of France, on the Indian Saturnia, which feeds, in the larva state, on the castor-oil plant, the insect being quite distinct from S. Cynthia, with which it has been confounded, and Dr. Boisduval proposes for it the name of S. Ricini, after its food-plant.

Descriptions of new European Lepidoptera, Formicidæ, Diptera, Arachnida, &c.

Mr. Douglas also directed attention to the 'Verhandlungen' of the Zoologisch-Botanischen Verein of Vienna, containing many entomological articles of great interest, including the following:—'On the First State of some Phycideæ;' by J. v. Hornig. The natural history of the following species is given:—

Gymnancyla canella (a rare British species). The larvæ feed, in September and October, on Salsola kali, eating the stems of the plant, and living under a whitish leathery web, which never contains more than one larva.

Spermatophthora Hornigii, *Led.* The larva feeds, in September and October, on the seed-vessels of Atriplex angustifolia.

Homœosoma binævella. The larva lives, in May and June, inside the flower-heads of Carduus Acanthoides.

Cryptoblabes Rutilella, *F.-v.-R.* The larva, which is very local near Vienna, lives in the autumn on alder bushes, changes to pupa at the beginning of October, and appears in the perfect state the following May.

There are also 'Descriptions of two new Geometridæ,' by Mann; viz., Psodos alticolaria and Geometra Beryllaria. 'Dipterological Fragments;' by Dr. Schiner and Dr. Egger. 'Contributions towards a Knowledge of Ants,' containing descriptions of several new species, by G. L. Mayr. 'Contributions towards the Monography of the Genus of Spiders, Dysdera;' by K. Doblika. A continuation of the 'Versuch, die Europäischen Spanner;' by J. Lederer. 'Notes on the Lepidoptera of Siberia;' by J. Lederer. 'On the Myrmicidæ, and a New Genus thereof;' by G. L. Mayr.

The Common Broom (Genista scoparia), *the food-plant of Anarsia Genistæ.*

Under this title Mr. Newman communicated the following note:—

"The following memorandum, placed in my hands by Mr. William Machin, of 35, William Street, Globe Fields, Mile End, will give our members an idea when and where to look for this scarce insect, the larva of which appears, from Mr. Stainton's 'Tineina,' to have been bred only from Genista tinctoria:—'Having collected a quantity of larvæ from the common broom in a number of localities, and placed them altogether in a breeding-cage, I reared from them, on the 6th of July last, two specimens of Anarsia Genistæ; thus proving not only the food-plant of the insect, but also that it appears in the perfect state in the beginning of July.'"

New Entomological Works.

Mr. Stainton informed the Meeting that Professor Boheman had recently published a Report on the Entomological Works and Papers of 1851 and 1852, which he characterised as very complete and effective: its title is 'Berättelse om framstegen i Insekternas, Myriapodernas och Arachnidernas Natural Historia för 1851 och 1852:' Stockholm, 1854.

Mr. Stainton also said that during his recent visit to Paris he had seen a very useful work, published by Mons. Leon Fairmaire and Dr. Laboulbène, entitled 'Faune Entomologique Française,' and containing descriptions of all known French insects: two parts of the Coleoptera are published, price five francs each.

Rectifications of Misstatements.

Mr. Westwood stated that he felt it necessary to make the two following rectifications of misstatements recently published in the Society's 'Transactions:'—

"I. In p. 58, vol. iii. New Series, Mr. Curtis has stated, in a foot-note, that the characters of Coniopteryx given by Mr. Westwood in the 'Introduction to the Modern

Classification of Insects' (Gen. Syn. p. 48), are copied from his 'British Entomology.' It will be necessary only to compare the characters given in these two works to see that this statement is unfounded: Mr. Westwood's original detailed description (accompanied by drawings of the anatomical details of the genus) was, moreover, read at the Entomological Society five months before Mr. Curtis published his description, and the insect was referred by Mr. Westwood to its legitimate family, whereas by Mr. Curtis it was incorrectly placed in the family Psocidæ; whilst Mr. Stephens, who had, in fact, first pointed it out as a genus, referred it to a different order."

"II. In page 134, vol. iii. New Series, Mr. Smith has described the Formicideous genus Stenamma, which he assigns to Mr. Stephens as its author; that author, however, had no other share in its establishment than that of indicating its existence in his Catalogue (p. 356), as follows:—

'Genus 92: (666) ——
4838. † 1. Westwoodii mihi. In Mus. D. Westwood.'

The fact simply being, that knowing that Mr. Westwood possessed a new British ant, which the latter regarded as a distinct genus, he thought fit to notice its existence, identifying it with Mr. Westwood's insect by attaching his name to it specifically. The name and characters of the genus were first given in the 'Introduction to Modern Classification.' Mr. Smith states, moreover, that there are no other differences separating Stenamma from Myrmica than the three-jointed labial palpi (in Myrmica they are four-jointed), the importance of which character Mr. Smith endeavours, perhaps with reason, to disprove. But, in the 'Introduction' (ii. p. 219, 226, and Gen. Syn. p. 83), Mr. Westwood has described and figured the structure of the mandibles and maxillary palpi, which entirely disagree with those of Myrmica, proving the insect to belong to the same section as Myrmecina and Polyergus."

Mr. Stainton read the following note:—

The Occurrence of the Small Genera of Tineina in Tropical Countries established.

"The question has frequently been asked, whether the small genera of Micro-Lepidoptera, Lithocolletis, Nepticula, &c., which are so plentifully represented in these temperate regions, did not also occur in tropical climates. Those who had collected abroad denied their occurrence there, because they had never seen them; but this was a negative proof which merely established that they had not been observed, not that they did not occur there; and to observe these small genera a special education is absolutely necessary; the eye which has been trained to detect an Ornithoptera on the wing at the distance of a quarter of a mile, cannot at once, and without previous practice, notice a Nepticula at the distance of a few feet.

"I have for some time entertained the opinion that, if the exotic Micro-Lepidoptera are to be collected, it must be by some entomologist who has learned first to collect insects of that group at home, and who then carries his home-bred skill into distant regions. I regretted that when Mr. Wallace and Mr. Layard were in this country neither stopped here long enough to learn the habits of our Micro-Lepidoptera: among the species of Microptera collected in Ceylon by Mr. Layard were several belonging to the family Elachistidæ, and I could scarcely doubt that a short training in this country would have enabled him to have discovered many smaller species.

"In August last Mr. Atkinson (well known as the captor of Gastropacha Ilicifolia) forwarded me some mines and larvæ of Phyllocnistis saligna and P. suffusella, and at the same time informed me he was about to start for Calcutta. I regretted to lose a useful correspondent in this country; but it directly struck me that here was an opportunity of obtaining information of East Indian Micro-Lepidoptera, which might prove of great importance to us, and I begged Mr. Atkinson to pay particular attention to any indications he might fall in with of the existence of the smaller genera in India.

"On the 6th of April I had the pleasure of receiving a letter from Mr. Atkinson, with the agreeable information that he had already detected the mines of three different species of Lithocolletis, of one of which he had reared the perfect insect, and of this species he has forwarded me some mines in the upper side of the leaves of Bauhinia racemosa, which I now exhibit; for this species, which, in the perfect state, has some affinity with our L. trifasciella, Mr. Atkinson proposes the name of Lithocolletis Bauhiniæ.

"I think this important discovery will be useful in urging upon those who may hereafter be likely to visit our colonies the necessity of completing their education in this branch of entomological science before they leave home, as I am satisfied that a skilled Micro-Lepidopterist in unexplored regions would, with the greatest facility, obtain novelties without end, and would also be able to observe the habits and transformations of the greater part of his discoveries, so that he would at once add to our knowledge as well as to our collections."

The President doubted if Micro-Lepidoptera would be found so plentiful in tropical countries as Mr. Stainton anticipated; for, even in the South of Europe, through which, in company with Mr. Walker, he made a tour some years ago, although they collected diligently, and sought especially for Micro-Lepidoptera in places similar to those in which they were plentiful in England, yet, out of more than six thousand specimens of insects they brought home, the number of small moths was very few. If Micro's were abundant in the tropics we should surely have had more of them sent to us.

Mr. Saunders said that when he was in India he gave very little attention to the small Lepidoptera; but he saw the mines of their larvæ in leaves, and he remembered that many small moths used to come to the lights at night.

Small Coleoptera in the Tropics.

Mr. Waterhouse said it used to be thought that tropical countries produced but few Micro-Coleoptera; but this was an error, for Mr. Darwin had brought from South America great quantities of minute beetles, collected chiefly just after the rainy season.

Mr. Westwood said Helfer had collected in India thirty species of Anthicus, besides many other small beetles, now in the collection at Prague.

Mr. Baly said Mr. Fry had in his possession a drawer-full of minute Staphylinidæ from Brazil.

'On the Entomostraca of South America.'

Under this title Mr. Lubbock read a descriptive paper, accompanied by drawings of the species.

A new Species of Agrotis.

Read the following description, by Mr. Henry Doubleday, of a new species of Agrotis taken in Britain:—

"AGROTIS ASHWORTHII. *Alis anticis cinereis, strigis tribus denticulatis atris, maculâ quadratâ nigrâ inter stigmata, posticis fuscis.* (Exp. alar. 1 unc. 5—8 lin.)

"Anterior wings cinereous, powdered with black atoms, with three denticulated strigæ arising from black spots on the costa; one near the base, a second before, and a third beyond the middle of the wing. Between the stigmata (which are very indistinct) is a quadrate black spot, and another between the anterior stigma and the second striga; a fuscous cloud crosses the centre of the wing as in Tæniocampa populeti, T. instabilis, &c.; cilia fuscous. Posterior wings fuscous in both sexes, with the cilia paler; head whitish; thorax cinereous; abdomen pale fuscous; antennæ fuscous, white towards the base.

"This pretty species, which appears to be quite unknown upon the Continent, was discovered at Llangollen, North Wales, by Mr. Ashworth, in the summer of 1853, and the specimen forwarded to me for inspection. Last summer many specimens were taken by Messrs. Cooke, Gregson, &c., as noticed in Mr. Stainton's 'Entomologist's Annual,' where the insect is figured under the name of Spælotis Vallesiaca. The figure, however, is by no means good, the anterior wings being much too broad.

"I forwarded a specimen of the male and a drawing of the female to my friend, M. Guenée, and he says that he believes it to be quite new; I have therefore named it after its discoverer: it is closely allied to A. lucernea, A. decora, &c."

Part iv. vol. iii. New Series, of the 'Transactions,' published in April, was on the table.

The President announced that Mons. Alex. Yersin, of Morges, Canton de Vaud, Suisse, is engaged on a Monograph of the Gryllidæ and Locustidæ, and solicits the loan of British species.

June 4, 1855.—JOHN CURTIS, Esq., President, in the chair.

Donations.

The following donations were announced, and thanks ordered to be given to the donors:—'Korrespondenz-Blatt des Zoologisch-mineralogischen Vereines in Regensburg,' Achter Jahrgang, 1854; by the Society. 'Proceedings of the Royal Society,' Vol. vii. No. 12; by the Society. 'The Zoologist' for June; by the Editor. 'Revue et Magasin de Zoologie,' 1855, Nos. 2, 3 and 4; by the Editor, M. Guérin Méneville. 'Annales de la Société Entomologique de France,' 3me Série, Tome ii. 1er, 2me et 3me Trimestres; by the Society. 'Journal of the Society of Arts' for May; by the Society. 'The Literary Gazette' for May; by the Editor. 'The Athenæum' for May; by the Editor. 'Contributions to Fossil Entomology' (from the 'Quarterly Journal of Proceedings of the Geological Society'); by the Author, J. O. Westwood, Esq. A selection of Indian Insects from the Himalayan district, consisting of many fine and rare species of several orders; by S. P. Pratt, Esq. Some small insects sent from Ceylon by Mr. Thwaites; by W. Spence, Esq.

Election of Members.

Herr Dohrn, President of the Entomological Society of Stettin, and William Atkinson, Esq., F.L.S., F.Z.S., F.R.B.S., &c., were balloted for and elected Members of the Society.

Exhibitions.

Mr. Stevens exhibited a splendid specimen of Ornithoptera Brookiana, the new species recently captured in Borneo by Mr. Wallace, and of which the description was read at the April Meeting of this Society.

Mr. Foxcroft sent for exhibition a box of Coleoptera, recently taken in Perthshire, including a single specimen of the very rare Dendrophagus crenatus, and a bred specimen of Anarta cordigera, with a pupa and puparium: of the latter he says, "They are found made up on the sunny side of stones or on the bark of birch trees; but the perfect insect selects the side of the stone or tree away from the sun."

The President exhibited the insects presented by Mr. Spence, and read the following extract of Mr. Thwaites' letter addressed to that gentleman:—

"One of the bottles contains the larvæ and imagos of a Carabideous beetle which infests the nests of a little black ant, a few of which are in the bottle. The other little bottle contains a lot of tiny species of insects of all kinds, amongst which is the pupa of a little Papilio, sent me by a neighbour as 'a most wonderful natural production,' and which, viewed through a lens, has a most extraordinary resemblance to a monkey's head."

The President also read the following note, addressed to him by Mons. Charles Delarouzée, of Paris:—

"In removing an old butt, which had served many years to hold water, to water the garden, it occurred to me that some insects might be found under it; and absolutely, by examining the earth carefully to the depth of three feet, and in the decayed wood of the butt, I took an individual of Euplectus sulcicollis, *Redt.*, and many examples of Anommatus 12-striatus and Langelandia anophthalma. I suppose that the Anommatus is a parasite of the Langelandia: probably, by searching in similar places, you might ascertain the fact."

The President observed that the insect described by Stephens as an Anommatus was the Aglenus brunneus of Gyllenhal and Erichson. He believed that the Anommatus had not yet been discovered in England.

On Saturnia (Hyalophora) cecropia.

Under this title the following note, by W. S. M. D'Urban, Esq., of Newport, near Exeter, was read, and the cocoons alluded to exhibited:—

"Having seen in the reports of the Proceedings of the Entomological Society, during the last twelve months, many notices relating to the silk of Bombyx Cynthia, and that several persons have discovered means whereby the glutinous substance which fastens the threads together may be dissolved and the silk unwound, I am inclined to think that several other Bombyces meet with undeserved neglect, and especially the subject of these notes, which appears to be well adapted for introduction into England, since it is a native of a climate subject to severe alternations of temperature; and the larva feeding only in July and August, it would not be at all affected by the cold of this island, as most of the other foreign species of Bombycidæ are. If we add to this that it produces an immense quantity of a very strong material, and that its food-plants flourish well in England, we have all the requisites to constitute a valuable silk-producing insect. During my residence in Canada I had several opportunities of observing its transformations; but I regret I did not determine *accurately*, from *my own* observation, its food, as only one of its splendid larva, and that a full-fed one, came into my possession: this larva was picked up crawling across a road at Sorel, Lower Canada, on the 19th of August, 1849, and was confined in a small basket covered with gauze: after many fruitless attempts to effect its escape it finally settled itself in the middle of the handle of the basket, and there began spinning its cocoon (No. 1) the same evening, which, however, it did not complete till the third or fourth day after, being engaged in spinning, with scarcely any intermission, during the whole of that time. Having been kept in a warm room through the winter, it was evolved on the 7th of April, 1850, seven months and nineteen days from the commencement of its cocoon. In its natural state, however, it does not make its appearance till June, remaining, therefore, nearly ten months in the pupa. The cocoon (of which the accompanying specimens are examples) contains an immense quantity of silk, and is double—a wise precaution against the severity of the Canadian winters: the outer case is of a very close and stiff texture; but the inner or true cocoon is rather finer, and is covered on the outside with a quantity of rough silk, whilst the side next the pupa is very smooth and polished. Could it be made useful it would be a great boon, as it must be a durable material indeed to resist the wind and rain of ten months, or of even two or three years, as I have found these cocoons adhering as strongly as ever to the tree the following spring after the escape of the moth.

"Even if the cocoons could not be unwound they might be carded and spun in the same manner as they do those of Bombyx Cynthia, &c., in India. These cocoons are common about Sorel and Montreal, and still more so about Toronto, in Upper Canada, and are very easily found, as they are spun on the smaller branches of various trees, and are very conspicuous when the leaves have fallen: they are most abundant on maple, but I have found them also on apple, fir, &c., and on palings and dead stalks of weeds. It appears to feed on a variety of plants, and amongst others I have reason to think on the choke-cherry (*Prunus serotina*), of which several plants, reared from seed sent from Canada, are now flourishing in the garden here, and could be grown to any extent required. I have seen it stated that it feeds on the wild American plum (*Prunus pennsylvanica*), and that it has been occasionally reared on apple-leaves. There would, therefore, be no trouble in finding food for it in this country; and I do not think there would be much difficulty in introducing it, as the cocoons could be gathered in any number in Canada and the United States, and sent home by steamer, packed in air-tight boxes, as sea air, from my own experience, seems to be fatal to them. It would be hardly possible to send the eggs across the Atlantic, as only two months intervene between the appearance of the moth and the larva going into cocoon, it is manifest the eggs must be hatched soon after they are laid: these eggs are large and oval in shape, and pure white. If the moths, when bred in England, could be got to pair, there would then be no further obstacle in obtaining a supply of silk by the end of the following August after their arrival.

"This and the other magnificent species of Saturnia inhabiting North America present a strange appearance, when darting past in the dusk of a summer's evening, and are extremely difficult to capture, unless they happen to be found at rest during the day. Mr. Gosse does not appear to have been acquainted with this fine moth, for, although he mentions several other species of Saturnia in his 'Canadian Naturalist,' he does not notice it.

"In conclusion, should the subject be thought worthy of the consideration of this Society, I shall be happy to obtain cocoons from Canada, and forward some to any entomologist wishing to make the experiment."

References to numbers attached to the cocoons were read.

Office of the Wing-rays of Insects.

Read, a paper by Mr. Newman, intituled 'A Memorandum on the Wing-rays of Insects,' in which the author maintains, in opposition to the published views of Herold, Kirby & Spence, Oken, Westwood and other distinguished entomologists, that the wing-rays are the supports of the membranous portion of the wing, and in all respects the analogues, although not the homologues, of the wing-bones of the bat, and that the passage of air, blood and nerves through their channels is simply a provision of Nature for their maintenance in a healthy and efficient condition. He supported this view by a reference to experiments and observations on living insects, and also by the anatomical researches of Chabrier and Bowerbank, which he had himself verified.—*J. W. D.*

NOTICES OF NEW BOOKS.

'*The Annals and Magazine of Natural History.*' Nos. 89 and 90, dated May and June, 1855; *price* 2*s.* 6*d. each.* London: Taylor and Francis, Red Lion Court, Fleet Street.

No. 89 contains the following papers:—

'On the Structure of Chlorophyll.' By Hugo von Mohl. [Translated from the 'Botanische Zeitung' for February 9 and 16, 1855, by Professor Henfrey.]

'Notice on the Question of the Presence of an Operculum in the Genus Diplommatina of Benson, and Description of a New Species. By W. H. Benson, Esq.

'Short Characters of some New Genera and Species of Algæ discovered on the Coast of the Colony of Victoria, Australia.' By W. H. Harvey, M.D., M.R.I.A., &c., Keeper of the Herbarium of the University of Dublin.

'Some Remarks on Vegetable Placentation.' By John Cleland, Esq.

'On the Attitudes and Figures of the Morse.' By Dr. J. E. Gray, F.R.S., V.P.Z.S.

'Descriptions of Eight New Species of Birds from South America.' By John Gould, Esq., F.R.S.

'On the Impregnation and Germination of the Algæ.' By Dr. Pringsheim. A copy of Dr. Pringsheim's researches on these obscure but interesting subjects, lately laid before the Berlin Academy, having been forwarded to Professor Henfrey, together with a request that he would make them known in England, that gentleman has prepared this paper, which is a brief and very compressed abstract, for publication in the 'Annals.'

Bibliographical Notices:—'A History of the British Marine Testaceous Mollusca, distributed in their Natural Order;' by William Clark. 'The Ferns of Great Britain,' illustrated by John E. Sowerby: the Descriptions, Synonyms, &c., by C. Johnson. 'First Steps in Economic Botany, for the Use of Students;' by Thomas Croxen Archer. 'The Entomologist's Annual for 1855;' edited by H. T. Stainton.

Proceedings of Learned Societies:—Royal—Linnean—Zoological—Botanical of Edinburgh.

Miscellaneous:—Origin of Wheat [extracted from the 'Gardener's Chronicle' for March 10, 1855]. Mr. Busk's Anomalous Shell; by Professor J. S. Henslow. On the Fructification of the Arachis hypogæa; by Hugh M. Neisler [extracted from 'Silliman's Journal' for March, 1855]. On the Structure of the Starch Granule; by Mr. Grundy [extracted from the 'Pharmaceutical Journal' for April, 1855]. Description of a New Species of Aulacorhamphus; by John Gould, Esq., F.R.S. [extracted from the 'Proceedings of the Zoological Society' for February 22, 1853].

No. 90 contains the following papers:—

'Monograph on the British Species of Phalangiidæ or Harvest Men.' By R. H. Meade, F.R.C.S.

'On the Structure of Chlorophyll.' By Hugo von Mohl. [Translated from the 'Botanische Zeitung' for February 9 and 16, 1853, by Professor Henfrey. This paper is now concluded.]

'On Perna quadrata of Sowerby.' By John Lycett, Esq.

'Notes on the Ornithology of Madeira.' By Edward Vernon Harcourt, Esq.

'On the Characters which distinguish the Vegetation of a Country.' By M. Alphonse De Candolle. [Translated from the 'Bibliothèque Universelle de Genève' for December, 1854.]

Proceedings of Learned Societies:—Zoological—Royal.

Miscellaneous:—On Phœnicura Tithys; by Dr. Jordan. On the Transmission and Metamorphoses of the Intestinal Worms; by MM. Milne Edwards and Valenciennes [translated from the 'Comptes Rendus' for April 30, 1855, p. 997.] Note on Trichomonas vaginalis of Donné; by MM. Scanzoni and Kolliker [translated from the 'Comptes Rendus' for May 7, 1855, p. 1076.] On a Lunar Vapour-bow: by Charles Clouston.

This is an unusually valuable number, containing three papers of interest to the zoologist; but I cannot help regretting that so much space should be occupied by extracts from other journals which almost every naturalist in Britain has on his study-table: in the present number I count twenty-seven pages of such extracts, besides sixteen pages of Proceedings of Learned Societies, which the said Societies themselves circulate amongst us. The papers to which I wish particularly to invite attention are, Mr. Meade's 'Monograph of the Phalangiidæ,' Mr. Harcourt's 'On the Ornithology of Madeira,' and Dr. Jordan's 'Note on Phœnicura Tithys.' Mr. Meade has done us good service by the publication of his Monograph: it is careful, lucid, and, I doubt not, conscientiously accurate: it describes five species of Phalangium, of which one, Phalanguim minutum, is new; two of the new genus Megabunus of Meade, of which one, M. insignis, is new; four of Opilio, of which one, O. agrestis, is new; one of Leiobunus; two of Nemastoma; and one of Homalonotus. As a friendly criticism I may add that the description of a new species, Phalangium minutum, from two specimens, "one immature," and of both of which the sex and habitat are unknown, is rather a dangerous precedent. Dr. Jordan's paper recites the various instances of the occurrence of the black redstart in the West of England, which have already been made known to ornithologists in the earlier numbers of the 'Zoologist.' The following notice of its habits is interesting:—"It seems always active in search of Diptera, on which it evidently feeds, and one reason for its preference for the cove by the Parson and Clerk rocks is, that a collection of the larger olive-leaved sea-weeds is generally heaped up there for manure; on this heap flies abound in mild weather throughout the year. The attachment to locality is, however, very marked in this species: they will be seen not only in a particular spot, but on a particular stone in that spot; they are fond of perching on some prominent point of rock, and from this they sometimes dart out upon any passing gnat, much after the manner of a flycatcher." Dr. Jordan speculates on the question, Why should this bird be a winter visitor, and the common redstart a summer visitor, in South Devon? but he adduces no evidence as to the direction in which the species is passing when arrested in its passage on the southern coast. A multiplicity of observations, or rather records of observations, respecting Sylvia Tithys seem quite to harmonise with, or at least not to disturb, the theory I have long since submitted to ornithologists, that there is a uniform movement among migrants, *southward* in the autumn, *northward* in the spring. Nothing is more probable than that the later individuals should be deterred, by the great breadth of sea, from crossing from the Devon and Cornish coast, especially as Dr. Jordan points out that there is a supply of food there throughout the winter: even as far eastward as Brighton, and all along the intermediate coast, the same facts obtain; but still further eastward, where the narrowness of the channel offers a facility to this feeble-winged bird for crossing, it is not found during the winter months, although occasionally observed on its southward passage in autumn, and on its northward passage in spring.—*E. N.*

The Natural History Review. No. VI., dated April, 1855; *price* 2*s.* 6*d.* London: Highley.

We notice with pleasure that this periodical has now obtained a London publisher, but still must be regarded as purely Irish in character, and as bearing the most direct and indisputable evidence to the zeal and industry of Irish naturalists. It contains 'Reviews,' 'Notices of Serials,' 'Communications made to Irish Societies,' and 'Proceedings of Irish Societies,' and is conducted in a spirit of fairness and with a display of critical acumen which are highly praiseworthy. It certainly seems a little remarkable that while the meetings of Irish Societies are reported thus carefully and regularly *in extenso,* not only in this 'Review,' but also in local newspapers, that in England such reports rarely appear in print: if we except the Entomological Society of London, reported in the 'Zoologist,' what

English Society is fairly represented by the literary press of England? We do not vouch for the value of all the papers read before Irish Societies; we think that, in many instances, the authors might with advantage study a little, previously to appearing in print, not only "How to observe," but "What to observe;" but we do assert and will maintain that these detailed reports are extremely useful, and doubly useful is the periodical which collects them with such care, and preserves them with such impartiality.

The following papers, read before Irish Societies, appear in the present number:—

'Notes on some Familiar Facts connected with Sounds and Hearing.' By R. Dowden, Esq.

'On Pectunculus Glycymeris, and on the Local Range of Molluscous Animals, traced with the Dredge.' By Dr. Farran.

'On a Species of Annelidæ new to Ireland.' By William Andrews, Esq.

'Remarks on the Percidæ and Serrani, with an addition to the Ichthyology of Ireland.' By William Andrews, Esq.

'Directions for Capturing Lepidoptera.' By the Rev. Joseph Greene.

'On the Probable Occurrence of the Lepidopus argyreus in Dublin Bay.' By Dr. Ball.

'On Cricetus phæus.' By Dr. Carte.

'Capture of Anthocharis Belia in Worcestershire.' By J. Walter Lea, Esq.

'Notes on the various Insects captured or observed in the Neighbourhood of Dingle, County Kerry, in July, 1854.' By A. R. Hogan, Esq.

'On Fungi parasitic on Insects; with particular reference to some lately-discovered Irish Specimens.' By E. P. Wright, Esq.

'Descriptions of Insects figured, and references to Plates illustrating the Notes on Kerry Insects.' By A. H. Haliday, Esq., M.A.

'On a Crustacean of the genus Hyas.' By J. Grainger, Esq.

'On Collecting and Arranging British Mollusca.' By E. P. Wright, Esq.

Two of these papers only require a passing notice:—

1st. The capture of Anthocharis Belia in Worcestershire. With respect to this and the simultaneously recorded capture of Pieris Daplidice in the same county, suffice it to make two observations: *first*, that we entertain not a shadow of a doubt that both statements originate in some error; and *secondly*, that the tone of the communication evinces a desire to maintain rather than amend the error: the error implies carelessness—its attempted maintenance an unphilosophical spirit.

2nd. Mr. Haliday's 'Descriptions of Insects,' on the contrary, is a paper of the highest scientific interest and the most painstaking accuracy. The following species are described:—one Hymenopterous; Heptamelus ochroleucus, synonymous with Melicerta ochroleuca of Stephens, a Tenthredinidous insect which "seems to connect Blasticotoma Filiceti of Klug and the group with 9-jointed filiform antennæ. The number of areolets, the broad stigma, and original of the radial veinlet, agree in both genera. Peculiar to Heptamelus is the short pobrachial areolet, which in the Tenthredinidæ usually extends a good deal beyond the end of the præbrachial. In Plagiocera, also, they are conterminous; but the pobrachial is twice as long as the posterior discal; and that genus, belonging to the group with clavate antennæ, has little affinity in other respects to Heptamelus." One Hemipterous, of the family Lygæidæ, Dipsocoris alienus of Haliday, synonymous with the Cryptostemma alienum of Herrich-Schæffer. "Meyer doubtingly refers this insect to the Capsidæ, influenced probably by the supposed want of ocelli which both Meyer and Herrich-Schæffer have overlooked. It seems to me better," continues Mr. Haliday, "to place it for the present with the Lygæidæ, in a peculiar section, next the Anthocorini, and approaching, perhaps, to the Capsidæ, with both of which it has considerable likeness in the wings; although the dilated and imbricated sutural margin of the hemelytra is peculiar to it, and the rather short, detached proboscis makes some approach to the structure of the Reduvidæ. On the whole, Hylocharis is probably the nearest allied native genus. In its habits it most resembles the Saldæ, but shuns the light more than they do." It "inhabits the banks of rivers, throughout the summer, gliding among the wet gravel, its silky down protecting it from the wet. It takes flight readily, even from the surface of the water. The yellowish larvæ and pupæ are found in the same situation, leaping like the perfect insect." Five Dipterous, Clunio marinus, a new genus and species of Chironomidæ, found on gravelly sea-coasts below high-water mark, walking with its wings half raised and in rapid vibration, without taking flight; Dolichopus prætextatus and Aphrosylus celtiber of the family Dolichopidæ; Geomyza cingulata of the family Muscidæ; and Canace nasica of the tribe Ephydrini.

'*Mollusca Testacea Marium Britannicorum. A History of the British Marine Testaceous Mollusca, distributed in their Natural Order, on the Basis of the Organization of the Animals; with References and Notes on every British Species.*' By WILLIAM CLARK. London: Van Voorst. 1855. 536 pp. 8vo. Price 15*s*.

THIS is just one of those books that we take up to study, rather than to criticise. It is full of information—full of the result of deep, reflective, patient study: a considerable portion has already appeared in the 'Annals and Magazine of Natural History;' but the author, having calculated that four years would be occupied in completing the entire work in that journal, and considering it would be almost presumptuous in him to calculate on being able to watch the publication during so long a period, determined on printing the whole in a collective form. There are no plates and no descriptions of shells: these wants Mr. Clark considers supplied by his continued references to Forbes and Hanley's 'British Mollusca.' No one can peruse this important volume without perceiving that the question of the scientific importance of the shell is now tested in the most severe manner; the animal has long been gradually crawling into importance; but we were scarcely prepared to see a dozen species dwindle into one, because, however different the shells, the animals were alike. A graver question is opened up than at first meets the eyes: Mr. Clark, by his own labours, is placed in direct antagonism to Forbes and Hanley, whose work on the British Mollusca he himself applauds, and concerning which a phrase of unqualified approbation has been stereotyped for the use of all future commentators. We proceed to prove this antagonism; it were unjust simply to record the impression made on ourselves by a perusal, however attentive. We close the book, and it opens spontaneously at p. 342: we proceed to quote:—

"L. RUDIS, *Donovan*.

"L. rudis, Brit. Moll. iii. p. 32, pl. 83, f. 1, 2, 3, 5, 6, 7, and pl. 86, f. 1.

"L. patula, Brit. Moll. iii. p. 36, pl. 85, f. 6—10, animal, pl. G G, f. 2.

"L. tenebrosa, Brit. Moll. iii. p. 39, pl. 84, f. 11, 12, and pt. 85, f. 1, 5.

"L. saxatilis, Brit. Moll. iii. p. 43, pl. 86, f. 45.

"L. fabalis, Brit. Moll. iii. p. 49, pl. 86, f. 2, 3.

"L. palliata, Brit. Moll. iii. p. 51, pl. 84, f. 8, 9, 10."

From this citation we have purposely omitted irrelevant references: confining ourselves to Forbes and Hanley's recent work, we find that six of their species are thrown overboard without hesitation, and we may add that four more species, zonaria, rudissima, jugosa and neglecta of other authors, are sent to keep them company. The author proceeds:—"To describe the varieties enumerated above, which are the pseudo-species of authors, would be to say that the organs of all, both internal and external, do not vary in the slightest degree in form: the only differences are modifications of colour, size, and in the striæ, depending entirely on habitat."

Thus, we are told, Forbes and Hanley devote nineteen pages of letter-press and twenty-three figures to a species which "*does not vary in the slightest degree in form.*" We have already said we take up the book to study, not to criticise, and we make no attempt to gainsay an assertion made so unhesitatingly; but a conclusion certainly forces itself upon us that these conflicting authors are unintentionally and unwittingly making sad havoc of our Natural History: no two books, written in the worst spirit of dogmatic controversy, of editorial heart-burning, ever contradicted each other more flatly, or advocated more opposite views, than these which, like a pair of turtle-doves, wing their amiable way from the same nest: never was criticism so crushingly severe as Mr. Clark's passing commentary on this dozen species of Littorina.

The truth of the matter lies hid in the fact that naturalists are not agreed as to "what to observe:" we have good books on "how to observe;" but unless we know "what" to observe it is of little moment that we learn "how" to observe it. The difficulty experienced by the compilers of works on the Mollusca is that they have to consult two classes of authorities, first, the conchologists, secondly, the malacologists—classes which are made to represent two different sciences, and it seems to us that we shall never arrive at just conclusions until these sciences merge in one. Entomologists experience a somewhat similar difficulty in the larva and imago, but—and, as it appears to us, wisely—avail themselves of the characters of both, in order to attain just conclusions. We do not say that the larva and imago are in any respect the analogues of the animal and shell; but the naturalist, in both cases, is presented by Nature with two classes of phenomena: is it wise of him to ignore either? From every page of Mr. Clark's volume we learn, as clearly as though printed in scarlet, that he considers the shell of no importance whatever in the study of the Mollusca: he utterly ignores it in the larger divisions—he utterly ignores it in species. Yet, we may ask, on what characters, excepting those of the shell, were those very genera founded which he adopts throughout his work? and if we are right in supposing that these genera were founded on characters of the shell alone, and are serviceable in a system dependant alone on the characters of the animal, does not this coincidence not only prove that the characters of shell and animal vary in unison with each other, but that the shell is a most important guide when the animal is injured, imperfectly preserved, absent or altogether unknown? We wish to know so much of nature, and really know so little, that we should rejoicingly avail ourselves of every assistance she may offer.

We must, however, confess to a great leaning towards that principle, which, indicated in everything Mr. Clark has written, tends to elevate physiological over physical characters as the basis and starting-point of system; and we behold, in imagination, the dawning of a new era in science, to be distinguished by a reference to causes rather than a studying of effects; by an observation of functions rather than of organs; by noting the stages by which a being arrives at maturity rather than by the mensuration of parts when mature. The idea, however, although, as we have said, indicated in all that Mr. Clark has written, does not originate with him; Adanson, Lamarck, Poli, De Blainville, Gray and Swainson have done much the same thing, making physiological characters the foundation of their several systems. It does, however, become a most important question, and it is one on which we range ourselves among the non-contents, whether the shell, which we are content to throw over in the classification, is also to be ignored in the discrimination of species. To us it seems, as the colouring of the bird, as the striping and spotting of the cat tribe, useless in the formation of primary groups, but all-important in the discrimination of species. A word more: Mr. Clark's terms are not sufficiently definite and precise; he is either careless in phraseology, or adopts technicalities of which he does not know the exact import: thus, in the very outset, his system, founded on sexual organization, is rendered obscure, by his using the word "diœcious" in a sense exactly opposed to the received one: this fault is not uncommon among those authors who go somewhat ahead of the rank and file of their brother naturalists, but it is nevertheless a grave one. He who promulgates new ideas should be particularly careful to explain them with perspicuity and precision. With these reservations we cordially recommend Mr. Clark's volume to the study of naturalists.

Remarkable act in an aged Cat.—There is at the present time (April, 1855) a cat, twenty-five years old, belonging to the Government House, New Brunswick, who has seen three successive Governors: this cat, who, from her venerable appearance, is called "Granny," a few weeks since produced a single kitten: she was much delighted with her offspring, and nourished him with the greatest care for one month. Another cat in the house then brought forth six kittens: as soon as Granny became aware of the fact she took up her son in her mouth, carried him to her neighbour's dormitory, and deliberately dropped him into her box. This feat accomplished, Granny began immediately to disport herself, gambolling all over the house, and from that time has never taken the smallest notice of her kitten: meantime the other cat gave a warm welcome to the intruder, and has brought him up with the same tenderness as her own. It is a laughable sight to see the foster-mother with her half-grown son and her own kittens. No wonder Granny was tired of a young family, but the anecdote shows she was in full possession of her faculties.—***Communicated by a resident at New Brunswick, through G. S. Kett, Esq., of Brooke, Norfolk.***

Occurrence of Honey Buzzards (Falco apivorus) *near Scarborough.*—A fine female specimen of this bird was shot at Flamborough on the 2nd of June: the stomach was full of frogs, slugs, &c.; the ovary did not contain eggs in a very forward state. A most beautiful adult male—a remarkable variety of this variable hawk—was also shot about the same time at Louth, in Lincolnshire: both specimens were bought by C. W. Shepherd, Esq., of Luddesdon, Kent, who has forwarded them to me to be preserved.—*Alfred Roberts; King Street, Scarborough, June* 14, 1855.

Occurrence of the Snowy Owl in Aberdeenshire.—Mr. Green has just shown me, in the flesh, a fine male specimen of the snowy owl, shot in Aberdeenshire on the 24th instant, and sent to him to be preserved.—*Edward Newman.*

An Owl laying an Egg after twenty years' confinement.—Having kept a female tawny owl (*Strix aluco*) in my possession nearly twenty years, she is now in perfect health, and, to my great surprise, laid her first egg yesterday.—*Henry Spurr; Westfield House, Scarborough, April* 24, 1855.

Ornithology of the Diggings.—We are quite in the Bush, and have innumerable birds of all sorts and sizes flying about; most beautiful parrots, parroquets, cockatoos by hundreds, and magpies by thousands: the noise made by the latter exactly resembles the tune of "Merrily danced the Quaker's wife," but they never get any further than "Merrily danced," and this over and over again, in all keys, is incessantly kept up all day, and sometimes at night too: then there is the laughing jackass, a bird that makes a horrid noise; bush turkeys, which fly very high; wild ducks, cranes, swallows, pelicans, crows, curlews, moorpawks, that say "Moorpawk" quite as plainly as our cuckoo says its name; but my favourite is a black swan with a white neck; it is all black except the neck, which is a dazzling white, and makes finer swan's-down than our English bird: it is a rare bird, flies very high in the air, and walks most majestically; one which settled near me the other day reminded me of the second Mrs. Dombey, so proud, firm and dignified; they tried to shoot it, but did not succeed.—*F. Woodroffe; Jeffrey's Dairy Station, near Kyneton, Mount Macedon, Victoria, Australia, January* 3, 1855.

Hen's Egg with Double Shell.—At page 4703 of the 'Zoologist' a correspondent appeals to your readers to corroborate a fact which he communicates concerning a double-shelled hen's egg. I have much pleasure in stating that an egg precisely similar to the one he describes was brought under my notice in March last by Mr. Burrell, poulterer, at Hastings, in whose possession the curiosity was. I do not at this moment recollect, although I took a note of it at the time, the exact weight and dimensions of the egg; but I think the weight was something like six ounces, and the measurement was something extraordinary. The hen which produced this monstrosity was a cross between a Malay and a mongrel Dorking. For the rest, the description supplied by your correspondent would apply equally to the egg to which I have referred.—*Edward Vernon Harcourt; 20, Portland Place, London, May* 9, 1855.

Extraordinary Hen's Egg.—The singular freak of nature recorded under this heading in the 'Zoologist' (p. 4703) is not, I think, of such very unusual occurrence as your correspondent seems to suppose. About two years since I was shown a very large egg, laid by one of the Dorking fowls, which contained a perfectly shelled egg inside, and I believe the remains of a second yolk in a fluid state; the interior egg and the fragments of the outer one I preserved, being the first instance of the kind I had ever met with. During that year I was told, on good authority, of a similar abnormity in a duck's egg; and I have lately heard of another hen's egg laid in the same manner.—*H. Stevenson; Norwich, June* 20, 1855.

Occurrence of the Little Ringed Plover and Smew near Brighton.—In February last my brother and self succeeded in obtaining several specimens of the little ringed plover (*Charadrius minor*), and also a very good specimen of the female smew (*Mergus albinus*), along the sea-coast between Cuckmere Haven and Seaford.—*G. Grantham;* 47, *Western Road, Hove, May* 19, 1855.

Occurrence of the Bittern and Goosander in Northamptonshire, and of the Red-throated Diver in Plymouth Sound.—On the 5th of January I shot a remarkably fine bittern (*Botaurus stellaris*) from a small brook below the village of Aldwinkle, in Northamptonshire. I only mention this, as the bird is excessively rare in the county; the last instance of its occurrence in Northamptonshire with which I am acquainted was near the same place, about twenty-five years ago. I saw and pursued a female goosander (*Mergus merganser*) for several days in January last, on the river Nen, in Northamptonshire; it was afterwards shot by our gamekeeper, and is now in my possession, stuffed. I shot a specimen of the redthroated diver (*Colymbus septentrionalis*) in the Sound here, on the 5th instant. Is this not very late for this bird in these parts? This specimen had a few red feathers in the neck.—*T. L. Powys; Mount Wise Barracks, Devonport, May* 16, 1855.

Occurrence of Buonaparte's Gull (Larus Buonapartii) *on the Irish Coast.*—On Wednesday, the 14th of February, 1855, Captain Watkins, a brother officer of mine, shot a gull on the coast near Skerries, about seventeen miles north of Dublin, which is pronounced by all the Natural History Societies of Dublin to be Buonaparte's gull (*Larus Buonapartii*), of whose occurrence I believe there are but two previously recorded instances in Great Britain. The bird has been preserved and mounted by Mrs. Baker, of Grafton Street, Dublin, and is now in Captain Watkins's collection.—*Id.*

Supposed insensibility of Reptiles to Poison.—In a recent number of the 'Zoologist' (Zool. 4705), one of your correspondents makes some remarks on the insensibility of reptiles to strong poisons, and instances a case of the common water-newt, as not suffering from the effects of "several strong doses of Prussic acid." This may perhaps occur among the Batrachia, but it is certainly otherwise with the viper, the only reptile that I have hitherto tried this poison upon. Last June, when in Devonshire, I procured a fine lively viper, and, wishing to preserve the skeleton entire, a difficulty arose as to the means of killing the animal without risking injury to any of the bones: it struck me that poison might be usefully employed for this purpose, and some Prussic acid of Scheele's strength having been just received from London for medicinal purposes, I at once proceeded to administer it. Holding the viper near the head with a stick, I put the bottle of acid to his lips; but, being unable to force open his mouth, I was induced to try another plan, and left him alone, with a single drop of the poison resting on the nose: these gentle measures succeeded better than the more forcible ones, for presently he protruded the tongue, and, on withdrawing it, carried the poison into his mouth: the effect was instantaneous; the viper began snapping furiously, rolled over on his back, and twisted about with the most violent contortions: in less than a minute a slight muscular contraction of the body, on being taken up, was all that remained of the vital powers that but a short time before were so actively displayed. The question of the effect of poisons on serpents, especially that of poisonous bites inflicted on them by similar or allied species, is one about which we have much to learn, and difficulties arise in drawing just conclusions from accidental cases, from the fact that the tooth of the assailant may perhaps penetrate some vital part, and death will be the consequence, without the application of the injected venom. Some cases that have occurred in the Zoological Gardens seem to bear on this point: in one instance a puff-adder was bitten through the head by his companion, and died; another was bitten on the back, and, although apparently suffering in consequence for a time, it lived for some months after, and ultimately died from other causes.—*E. W. H. Holdsworth; 26, Osnaburgh Street, May* 16, 1855.

Supposed unnoticed character in the Angler or Fishing Frog.—With reference to Mr. Thomson's notice (Zool. 4705) of the leaf-like appendages on the body as well as on the head of Lophius piscatorius, I may observe that they are distinctly, although perhaps not very accurately, represented in the figure of that species at the head of the article in the second edition of Yarrell's 'British Fishes,' though the author appears to have omitted mentioning them in his detailed description, except as being found around the head. I had an opportunity, with many others, of examining this fish soon after its arrival, when its extraordinary appearance and many curious characters made it a general subject of regret that it had not survived its journey from the coast. I mention the second edition of 'British Fishes,' as that is the only one that I have by me; but, as the fish in question is so well known, the figure is probably the same in the first edition of that work.—*E. W. H. Holdsworth; 26, Osnaburgh Street, May* 16, 1855.

Salmon and Salmon Fry.—Knowing the interest you take in all that relates to Natural History, I would, had my time permitted, have sent you a memorandum before now of a very interesting meeting which took place at the salmon-breeding pond, a few miles above Perth, on Wednesday, the 2nd inst. The hatching-troughs connected with the pond were stocked with ova during the season before last, and these were successfully hatched in the course of the spring of 1854. The young fry speedily became inmates of the capacious pond, in which they have continued ever since, and where they are now in excellent condition. The pond is very judiciously constructed, being not only ample, but of various depth, with a fine pure sparkling stream running through it night and day. It corresponds entirely in its character to any natural expanse of the river Tay, on the bank of which it is formed. Many of the young fish enter the supplying stream, and sport there in the current. You are aware that two objects have been kept in view by the promoters of this experimental pond; first, to increase the breed of grilse and salmon, by raising securely an additional supply of parr, which are the young recruits from which the marketable fish are eventually obtained; and, second, to ascertain, by a renewed and enlarged experiment, open to the inspection of the public, whether these parr assume the silvery aspect and general condition of *smolts* (on becoming which they speedily migrate to the sea) after the completion of their *first*, or not till the termination of their *second* year. Mr. Andrew Young, of Invershin, a person of great experience, maintains that the *smolting*, and consequent seaward journey, take place in about a year, that is, that the fry hatched in the spring of 1854 will become smolts, and seek the sea, in that of 1855. This, of course, if the correct view, would be the more agreeable, because advantageous, one for the artificial breeder, in so far as, in the rearing of his young fish, he would save a year's care and keeping; and where there is only a single pond, that pond might be emptied of its contents each season, and the newly-hatched fry let down into it, soon after their predecessors of a year old had been allowed to take their departure to the sea. On the other hand, Mr. John Shaw, the first who *demonstrated* that parr, commonly so called, were the fry of salmon, and remained for a long continuance in the river waters, maintains that these small fishes do not become smolts, nor seek the sea, till after the completion of their *second year* from the time of hatching; so that, in his opinion, the genuine smolts of this spring were hatched in the spring of 1853, while the parr of last year's hatching will not grow into smolts, nor migrate seawards, till the ensuing spring of 1856. I desire now to state to you, very briefly, the result of our recent examination of the contents of the pond, and the conclusion come to. We saw many thousands of these parr, with sufficient distinctness to receive a correct impression of their actual state; and we, moreover, netted a sufficient number of *samples* for a closer and more minute examination. Although these fish are now about thirteen months old, *there was not a single smolt among them.* They corresponded entirely to the year-old parr which we took from the river for comparison. The only example of a *smolt* exhibited to the meeting throughout our prolonged and careful inquiry and investigation of several hours, was one caught by Dr. Eisdale, of Perth, *while angling in the river Tay.* He brought it up to us immediately, and when set alongside the parr from the pond, its greater size and spotless silvery lustre made its difference obvious to all. The meeting came to the distinct and unavoidable conclusion that the inhabitants of the pond *were still parr;* and Lord Mansfield, especially, and very properly, pressed for their being detained in confinement for another year, for the sake of a complete and conclusive experimental demonstration that these so-called parr take two years to become smolts. In this view Mr. Shaw (who was present) and myself cordially concurred. We did not hear a dissentient voice; and not a syllable was said about a single smolt having been seen in the pond:

their continued captivity was therefore determined on.—*James Wilson; in 'Witness' Newspaper.**

Note regarding the Name of the Australian Trap-door Spiders.—In the January number of the 'Zoologist' (Zool. 4561) there is an inquiry, from the Rev. A. Hussey, respecting the name of the Australian spiders which form their habitations in the ground, with a movable entrance. This question cannot be determined, unless specimens of the spider itself could be procured and examined by a competent Arachnologist, which I believe has never yet been done. Spiders which construct burrows in the earth furnished with a moveable lid have been found in different parts of the world, as Jamaica, Barbary, the Island of Naxos, Montpellier and Corsica, besides Australia; and, although a good deal has been written regarding them, authors are not quite agreed as to the names of the species. I may refer Mr. Hussey to the 'Bridgewater Treatise,' written by the late Mr. Kirby, who gives a plate containing figures of the nests constructed by two of these species, which he denominates Cteniza fodiens and C. nidulans: he also gives an interesting description of the construction of the nests or tubes. He refers to a memoir published in the Annals of the Entomological Society of France (vol. ii. p. 69), by M. V. Audouin, who mentions four species of the genus Cteniza, *Latr.* (only a subgenus of Mygale, according to Walckenäer), all of which construct these trap-door retreats. Mr. Westwood read a memoir before the Entomological Society of London in 1840, respecting a living spider, which he received from Barbary, said to possess this curious instinct: it was afterwards published in the 'Annals and Magazine of Natural History' for February, 1841, but I have not the volume by me: he referred the specimen to the genus Sphodros of Walckenäer; but the latter naturalist doubts the accuracy of his statement, in consequence of all the species of Sphodros with which he was acquainted being natives of America (Walckenäer, Hist. Nat. des Insectes Aptères, tom. ii. p. 440). The Australian species probably belongs to a different genus from any of the others, and Walckenäer says that perhaps it may be identical with his Missulena occatoria, a name given by him to an Australian spider (loc. cit. vol. i. p. 253), with whose habits he was unacquainted.—*R. H. Meade; Bradford, February* 21, 1855.

Gonepteryx Rhamni double-brooded.—I am requested by several of my entomological friends to offer a few words in answer to Mr. Newman's remarks under this head (Zool. 4706); I should otherwise have considered as superfluous any addition to Mr. Bree's list of authorities and conclusive remarks upon the subject. By applying the term "double-brooded" to G. Rhamni I endeavoured to convey the impression that, as far as my own observations went, there were two broods of this insect in the year. I did not add any "further comment," because, the same fact having been already noticed by several authors, I was unwilling to trespass upon the good nature of the Editor of the 'Zoologist,' by lengthening unnecessarily my already long article: I should otherwise perhaps have hazarded a suggestion, or rather a query, as to whether this insect, in *favourable* seasons, may not be somewhat similar in its appearance to such insects as Thyatira batis, which "keeps on coming out" through a great portion of the summer. I say "favourable seasons," for in ordinary seasons its general appearance is confined to the two flights, in spring and autumn, which, as Mr. Bree says, no one doubts. My observation of G. Rhamni on the Continent resulted in my having an impression that the above might be the case, but I cannot, at present, speak with sufficient accuracy as to whether it is so or not. It appears to be an established and undoubted fact that, in this country, many of the spring specimens of this insect are in "perfectly fresh and brilliant condition," as noticed, not only by the "practical entomologist" mentioned by Mr. Bree, but also by every entomologist whom I have consulted on the subject. With regard to the ragged specimens one meets with in winter and early spring, no one, I believe, ever doubted their having hybernated. They present to the eye the same "faded state" which Mr. Westwood, in his splendid work, notices in similar veteran specimens of Vanessa polychloros. Any supposition that Mr. Newman may not have had such opportunities of observing G. Rhamni as some of the practical country entomologists is at once set at rest by his remarks, for it is plain that he has enjoyed the most enviable opportunities of studying this insect. Had I ever been so fortunate as to visit the "happy hunting-ground" in which this beautiful butterfly is to be found all the year round, as Mr. Newman describes, I should, in my limited knowledge of Entomology, have been more inclined to have called it "hundred-brooded" than have cavilled at the term "double-brooded" being applied to it; for, as one of my correspondents, an "eminent Lepidopterist," after writing as follows—"Surely there is a spring hatch of G. Rhamni, as well as an autumn one, and a Christmas-day specimen would differ from an April one; and if Mr. Newman has taken note of the condition of many *April* specimens, he must be an active pedestrian, if not '*Aliger*' himself," very aptly adds, "and if he has seen it on 'New Year's-day, and almost every succeeding day in the year' (except with a pin through it), his locality must beat all 'Forests of Bere' out of the field; and the climate realize the 'ver perpetuum' of the poets." Well, upon the face of the acknowledged fact that many of the spring specimens are "perfectly fresh and brilliant," we are now told by Mr. Newman that "his conviction, his firm conviction" is that there is only one brood, an autumnal one. We therefore have it asserted, with all the authority of the late President of the Entomological Society, that the brimstone butterfly, emerging from its chrysalis in the autumn, not only survives the winter (which no one doubts), but, after laying its eggs, continues to enjoy a vigorous existence until the eggs it has laid are hatched, the larvæ fed up, and the chrysalides ready to burst; in short, that the period of its existence is a year; and that all this knocking about the world has rather improved its personal appearance than otherwise. We shall thus have insects approaching nearer to the condition of birds, and shall be led to look for perfection in a specimen (at least of Gonepteryx Rhamni), not as soon as possible after its appearance from the chrysalis, but rather to wait until it attains to its full adult winter or spring plumage. And now, I beg respectfully to submit that it is Mr. Newman who has made an "interesting and important discovery," and one which, if established, would tend to overthrow all one's preconceived opinions as derived from one's own observations, aided by reference to standard works, upon the economy of insects, especially butterflies; and would deprive of half their meaning the lines of that beautiful poem ('The Butterfly's Birth-day'), which say

---

* Communicated by A. White, Esq., of the British Museum.

> "When bursting forth to life and light,
> The offspring of enraptur'd May,
> The butterfly, on pinions bright,
> Launch'd in *full* splendour on the day.
>
> "Unconscious of a mother's care,
> No infant wretchedness she knew;
> But as she felt the vernal air,
> At once to *full perfection* grew."

Having thus directed Mr. Newman's attention to the more important part of the subject, it would be superfluous to add the reasons which induced me individually to call, and for the present still to consider, Gonepteryx Rhamni "double-brooded."—*William Henry Hawker; Horndean, Hants, June* 21, 1855.

Capture of Nomada borealis at Gosforth, Northumberland.—I have taken a fine series of females and two males of that beautiful bee Nomada borealis: they are parasitical upon Andrena bicolor, and were entering its burrows when captured. The locality was a slippery bank of dry friable clay, in a pine-wood, at Gosforth, and the time the latter end of April,—one of those cold gusty days (of which we have had so many), relieved only occasionally by a gleam of sunshine; and it is somewhat curious that I have not taken a specimen since, although I have watched the locality on sunnier and more "likely" days.—*Thomas John Bold; Angas Court, Bigg Market, May* 31, 1855.

Tenacity of Life in a Bembidium.—Yesterday, when collecting Bembidia on the shingly borders of the Thames, I observed a curious-looking insect endeavouring to get out of a small hollow left in the mud by the removal of a pebble. On closer examination I found the mysterious object to be the head, thorax and two fore-legs of Bembidium concinnum, which had, no doubt, been severed from the remainder of its corporation in scraping over the shingle with my digger. About five minutes afterwards I encountered the trunk and remaining limbs of this unfortunate insect, and finding them quite dead, turned again to the fore-quarters, which were as active, on being touched, as if no injury had been sustained: the strength and vigour of this portion seemed unimpaired, but, from the impossibility of maintaining the balance, it repeatedly rolled back to the bottom of the cell, not being practised in the *pas de deux*. I marked the spot with a forget-me-not (a rather appropriate mark), and examined the living fragment at intervals of five minutes; it was quiescent till disturbed, but then became very active: this continued up to three-quarters of an hour from the time of first observing it, and in another five minutes all motion had ceased; it seemed as if its powers had failed suddenly. I mention this incident, because it seems to me somewhat singular that the fore portion should be so much more retentive of life than the rest of the frame in those races in which that portion is not the principal seat of the nervous mass; in the Vertebrata the case appears very different. I ought to mention, however, that one of the elytra seemed to indicate that some further injury had happened to that portion than the mere separation.—*George Guyon; Richmond, Surrey, June* 20, 1855.

Marine Vivaria.—I beg to draw your attention to a fact which, although probably well known, has never, that I am aware, been published in any remarks on vivaria: I allude to the fact that plants will live in water without the compensating balance of animal life. My study-window faces North-east, and I have at the present time five show-glasses filled with salt water, and two and a globe filled with fresh water. The following is the state of the marine portion:—No. 1 was three-parts filled, last June, with water, and a few animals, that I had under examination, and some weeds placed in it; the animals and weeds died: I left it still in the window, and two-thirds of the water has evaporated; there is, notwithstanding, a healthy growth of Enteromorpha, and the surface is covered with air-bubbles: the water, as in all, is perfectly sweet. No. 2 was filled in August last, and a small gurnard placed in it: as the water evaporated it was filled up to its original level with fresh water; the gurnard was killed by the severe frost, and the water left: no weeds were placed in this glass, and the dead gurnard was taken out: the water has evaporated to half, and there is now a luxuriant growth of Enteromorpha, much thicker and more forward on the side next the window. No. 3 was also filled with sea water in June last, but nothing placed in it: in the course of a few days a growth of green weed appeared. In July or August last I placed in it a small mullet: this mullet died near the end of the last frost, and the water has been since left; it is now covered with a growth of weed, but not to the extent of the last; it has, however, a thick coating on the bottom, and a small quantity of film floating on the top: the mullet fed on the weed. No. 4 was filled, in March last, with weeds and a few of the smaller Serpulæ and Annelides: these last I by degrees took out, leaving nothing but the weeds: all these are alive and doing well, and the sides of the glass jar are covered with patches of green weed; the weeds evolve oxygen in large quantities, and the top of the water is covered with patches of air-bubbles. No. 5 contains water which I made putrid by throwing in dead animal substances, until it became black and stunk insufferably; I then filtered it several times through filtering paper, in which was placed a quantity of powdered charcoal, until I at length obtained it scentless and crystalline: I left it in a room away from the window until to-day, and on examining it I find a slight growth of weed round the edges of the bottom: the taste of this water is slightly pungent. In all these glasses the sole animal life is a few minute Entomostraca, such as Cyclops and Cypris. Now, if carbonic acid is evolved solely from animals, whence comes the necessary quantity for the plants in my glasses? The facts are exactly as I have stated them; and another fact that I have observed appears to point to a solution; it is this—if you watch the glasses during the morning, and as long as the sun does not shine on them, you will find all at rest. There are the plants, and there is the water, but no air-bubbles; but watch it when the sun shines on the glass, then you will find that, one after another, the little bubbles form and rise to the surface, and this lasts until the rays of the sun cease to shine on the glass. Should the sun, as at this present moment, be hidden by clouds, the bubbles cease forming, but to recommence on his appearance. From what I have said it appears to me that I shall be justified in assuming that the direct light rays of the sun possess and exercise the power of forming sufficient carbonic acid, or some other chemical combination, for the well-being of plants, and thus far supplies the want of animals.—***William Thompson**; Weymouth*, *May* 28, 1855.

Notes on certain British Hydrocantharidæ.

By the Rev. Hamlet Clark, M.A.

"Things hoped for" is a subject which deserved, and has already received, your attention. There are many things among Coleoptera for which we have been "hoping" for the last twenty years: with your kind assistance as editor our wants perhaps may be supplied, and at length we may hope to find.

My object in writing to you is to point out some of the enigmas which exist among British Hydrocantharidæ, and also to ask for the good aid of your readers, in endeavouring to obtain solutions.

Haliplus fluviatilis. Schaum (Zool. 1889) detects two British specimens in Mr. Wollaston's cabinet, the locality of which is unrecorded. It appears to be a river species, having been taken freely in the Seine by M. Aubé, and by M. Chevrier among Confervæ in the Rhone: the species has probably been overlooked as a variety of H. impressus, which it closely resembles.

H. Sanmarkii. I have little doubt that this will prove a variety of that most inconstant of Hydropori, rivalis: I notice it, however, as the question may readily be set at rest by any one who is in the habit of taking this latter species. I have never seen a specimen which exactly corresponds with Aubé's description of Sanmarkii, though several examples in my cabinet of rivalis approximate to it.

Hydroporus opatrinus. The sole authority for this as a British species appears to be "Netley, Salop," taken by the Rev. Mr. Hope. Steph. Man. ii. 193, Appendix. Has it ever been taken in this or any other locality since 1829, the date of that capture?

H. ferrugineus. Stephens (Man. ii. 193) gives near Collingbourne wood once in 1828, and several in a stream at Kimpton, during the spring of 1829. This insect is allied to Memnonius, and appears to be generally distributed, occuring also in the lake Constance.

H. Scalesianus. A pair were taken by the late R. Scales, Esq., in Norfolk, previous to 1828; one specimen of these is in Stephens' cabinet: the species has not since occurred. It has been taken in great abundance by M. Erichson, at Berlin, and according to Schaum (Zool. 1893) is very local. Mr. Scales resided at Beechamwell, near Swaffham, Norfolk, and his home collecting-ground was a high chalk district: although I have visited that country during three summers in search of this insect, my then ignorance of these facts is quite sufficient to account for my entire failure.

Hydroporus unistriatus. I have seen but one example, taken many years ago in a chalk-pit, on the Madingley road, near Cambridge. Stephens gives London and Devonshire as its localities: it is generally distributed throughout the continent.

Hydaticus stagnalis. Not common; although occurring throughout the Continent. I shall be glad to hear of any modern localities in Britain (Steph. Illust. ii. 86).

Agabus serricornis. By Mr. Hope, "at Netley, rare." There is no reason why this insect may not occur in Soctland or the Orkneys, as plentifully as in the north of Europe, Sweden and Lapland.

Cybister Rœselii. This beautiful species is found in most countries of Europe, though the single recorded instance of its capture in England is in 'Stephens Illustrations,' at Walton, Essex, at the end of September, 1826.

I feel that I need not apologise for sending you this list: it appears to me not only to suggest practical matter for investigation to the working entomologist, but to be of some little interest by pointing out how far the labours of the present generation of Coleopterists have been surpassed by those of the former: in this group at least we are obliged to confess to the probability that our known Fauna of good species is not so extensive as in 1830. I fear that among the Helophoridæ and Hydrophilidæ, when they are properly understood, our position will be found to be even more unsatisfactory.

Might I venture to invite especially the attention of our Scotch entomologists, and of naturalists who are proposing tours into the Highlands, to the subject of this paper? I am confident that any one who will carefully examine the water-beetles of those districts will be amply rewarded by the discovery of new species. During a visit of only a few days in the autumn of last year, I was fortunate in taking, *inter alia rarissima*, a new Hydroporus at Oban, and a new Dytiscus in Mull; both species (as are some six others, at present unknown to us), common in Lapland. I shall be happy to supply exact details and directions to any one who wishes to examine these localities, or to any one who may propose to search the waters of his neighbourhood any information in my power. It is only by the united labours of many that success in the investigation of any department of insect life can be attained; but especially in this case, when, as in these groups, peculiar habits forbid general distribution, and the lives of generations of a species are confined to the limits of one solitary lake or moor. This stimulates the efforts of the individual lover of Nature, for by his researches he can enrich others, and this rewards combination, for thus the knowledge of each consists of the results of the united labours of all.

HAMLET CLARK.

Northampton, June 23, 1855.

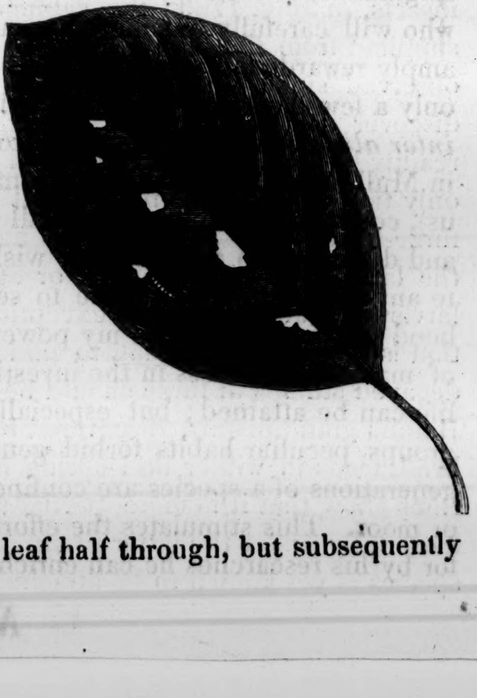
Entomological Botany (with more especial reference to the Plants frequented by the Tineina). By H. T. STAINTON, Esq.

(Continued from page 4457).

Rhamnus Frangula. Alder Buckthorn.

Speyer enumerates as feeding on this plant Psyche Viciella and Agrotis ravida; Bruand is silent respecting the food-plant of the former, and the latter is stated by Freyer to feed on various low plants, especially the species of Rumex; it appears, therefore, questionable whether either of them has any partiality for the Rhamnus. The Continental Dosithea incanata is stated to feed on this plant, but the larva does not appear to have been observed by any entomologist since the time of Hübner. The larva of Hyponomeuta plumbellus has been reputed to feed on this plant, but there is reason to believe this supposition was erroneous.

The above is a very good sample of the amount of scrutiny that Speyer's compilation requires, in order to ascertain the proper degree of confidence to be placed in it; as Pisistratus Caxton says, in 'My Novel,' *à propos* to "Knowledge is power," *Never quote second-hand.*



However, there is one Micro-Lepidopterous larva which *certainly* feeds on Rhamnus Frangula, and may be found thereon in August— this is Bucculatrix Frangutella: the larva, when young, mines the leaf in concentric circles, as shown in the annexed wood-cut; after a time it ceases to mine in a continuous curve, and flies off at a tangent; it is then about to quit the mine, after which it changes its skin, and then feeds on the leaf externally, at first only eating the leaf half through, but subsequently making holes in the leaf.

Ulex Europæus. Common Furze; Gorse.

An unpleasant plant to search for larvæ amongst, as it is very difficult to do so without pricking the fingers and trying the temper of the collector. Much probably remains to be done before the entomological treasures of this plant can be considered exhausted. The larva of Catoptria ulicetana, which, in the perfect state, swarms on furze bushes all the summer, is reputed to feed on the seeds, where it finds as a bedfellow the Coleopterous Oxystoma Ulicis. Two of the Depressaria larvæ feed on this plant in June, D. costosa and D. umbellana; the larva of the former is brown-black, and feeds on the flowers and the young tender shoots; it is, like many of its congeners, very active: the larva of D. umbellana we have not yet succeeded in finding, and I cannot therefore point out to the collector wherein it differs from that of D. costosa. Of the omnivorous genus Gelechia only one species is known to feed on this plant, viz., Gelechia mulinella: it has an epicurean taste; it enters the unexpanded flower-buds in April, through a hole it makes in the hinder petal; it then discusses at its leisure the stamens and anthers, and proceeds to a neighbouring bud to repeat a similar dainty meal. Anarsia Spartiella, in the perfect state, frequents Ulex as well as broom, and it is probable that the larva feeds also on the shoots of this plant. The original discovery of Œcophora Lambdella is thus recorded by Donovan:—"has hitherto only been taken on Epping Forest: the brood was discovered on a furze-bush, by Mr. Bentley, an eminent collector of insects, in July, 1789; the cabinets of several naturalists have been supplied from the parcel then taken, as the species has rarely been observed since." Whilst we are groping completely in the dark to discover a larva, any ray of light, however feeble, should always readily be thankfully received, and as this insect is, at the present day, only taken singly, the record that a large number were taken in one furze-bush nearly seventy years ago may assist us by indicating that the larva feeds on some part or other of the Ulex. The Œcophora larvæ feed, almost without exception, on decayed wood: the presumption is therefore great that, to find the larva of Œcophora Lambdella, decayed stumps of furze should be carefully examined. The larva of Butalis grandipennis, discovered by Mr. J. F. Brockholes, of Birkenhead, feeds in winter and spring on this plant; but, as his observations show that it is more partial to the Ulex nanus, it is mentioned more fully under the latter plant. Of the genus Coleophora only one species is yet known to be attached to the Ulex, namely, Coleophora

6 AU 55

bicosta : the larva may be found in autumn and spring, but its case osely resembles a dried calyx of the plant, and it requires a very ose scrutiny in order to distinguish it. One Lithocolletis, ulicicolla, frequents the furze, and no doubt the larva feeds on it, but therto we have failed to find it; indeed, the Germans have far outripped us in their skill in finding Lithocolletis larvæ in Papilionaous plants, and at present we are quite laggards in the race.

H. T. Stainton.

Mountsfield, Lewisham, June, 18, 1855.

---

w ready, Second Edition (with considerable additions), with a Coloured Plate, Price 2s. 6d.

HE ENTOMOLOGIST'S ANNUAL FOR 1855; comprising Notices of the New British Insects detected in 1854; Instructions for Colng, Preserving and Arranging Insects; and an Address to the Young Entomologists ton, Harrow, Winchester, Rugby, and at all other Schools.

London: John Van Voorst, 1, Paternoster Row.

BRITISH HYDRADEPHAGA.

HE REV. HAMLET CLARK having been requested to draw up for publication a monograph of the British Species of Hydradephaga and Philrida, will be glad to receive for examination specimens of any doubtful species from opterists. He desires particularly to receive species of Octhebius, Hydræna, Limus, and Elmis.

Any examples entrusted to him will be either at once named and returned, or in of doubt, they will be returned after they have been submitted to Continental omologists.

Among the more obscure genera, series of the insect, when practicable, will be of t advantage.

Northampton, June 21, 1855.

TO ORNITHOLOGISTS.

) BE SOLD, A MALE THRUSH, perfectly white, with pink Eyes, now in Song.

Also, A MALE WHITE BLACK-BIRD, with pink Eyes.

Also, A MALE LINNET, quite white.

Also, A SINGING and TALKING STARLING.

They are all in a healthy state, and can be seen by applying to the owner, William nson, adjoining the Church, Queen Street, Hammersmith.

ENTOMOLOGICAL SOCIETY.

N ADDRESS delivered at the Anniversary Meeting of the Entomological Society of London, on Monday, January 22nd. By Edward man, President.

*** This Address has been divided into Chapters for the convenience of reference, eprinted with Title-page and Wrapper. *Price One Shilling.*

London: John Van Voorst, Paternoster Row.

CONTENTS.

Insects.—Singular State of a living Helops, *George Guyon, Esq.*, 4741. Egg and Young Larva of Crymodes Templi, *Rev. Job Johnson*, 4741.

Proceedings of Societies.—Society of British Entomologists, 4741. Entomological Society, 4743.

Notices of New Books.—'The Annals and Magazine of Natural History,' Nos. 89 and 90, 4752. 'The Natural History Review,' No. 6, 4755. 'Mollusca Testacea Marium Britannicorum. A History of the British Marine Testaceous Mollusca, distributed in their Natural Order, on the Basis of the Organization of the Animals; with References and Notes on every British Species. By William Clark,' 4758.

Quadrupeds.—Remarkable act in an aged Cat, *G. S. Kett, Esq.*, 4761.

Birds.—Occurrence of Honey Buzzards (*Falco apivorus*) near Scarborough, *Alfred Roberts, Esq.*, 4761. Occurrence of the Snowy Owl in Aberdeenshire, *Edward Newman*, 4761. An Owl laying an Egg after twenty years' confinement, *Henry Spurr, Esq.*, 4761. Ornithology of the Diggings, *Mrs. F. Woodroffe*, 4761. Hen's Egg with Double Shell, *Edward Vernon Harcourt, Esq.*, 4762. Extraordinary Hen's Egg, *H. Stevenson, Esq.*, 4762. Occurrence of the Little Ringed Plover and Smew near Brighton, *G. Grantham, Esq.*, 4762. Occurrence of the Bittern and Goosander in Northamptonshire, and of the Red-throated Diver in Plymouth Sound; Occurrence of Buonaparte's Gull (*Larus Buonapartii*) on the Irish Coast, *Hon. T. L. Powys*, 4762.

Reptiles.—Supposed insensibilty of Reptiles to Poison, *E. W. H. Holdsworth, Esq.*, 4763.

Fishes.—Supposed unnoticed character in the Angler or Fishing Frog, *E. W. H. Holdsworth, Esq.*, 4763. Salmon and Salmon Fry, *James Wilson, Esq.*, 4763.

Arachnida.—Note regarding the Name of the Australian Trap-door Spiders, *R. H. Meade, Esq.*, 4765.

Insects.—Gonepteryx Rhamni double-brooded, *Rev. William Henry Hawker*, 4765. Capture of Nomada borealis at Gosforth, Northumberland, *Thomas John Bold, Esq.*, 4767. Tenacity of Life in a Bembidium, *George Guyon, Esq.*, 4767.

Marine Vivaria, *William Thompson, Esq.*, 4768.

Insects.—Notes on certain British Hydrocantharidæ, *Rev. Hamlet Clark, M.A.*, 4769. Entomological Botany (with more especial reference to the Plants frequented by the Tineina), *H. T. Stainton, Esq.*, 4771.

TO ORNITHOLOGISTS AND PROFESSIONAL NATURALISTS.

This day is Published, in one Folio Sheet, an entirely New Edition of the

ZOOLOGIST LIST OF BIRDS observed in GREAT BRITAIN and IRELAND, to be used for Labels, and also to facilitate the Exchange of Birds and Eggs: it is brought up to the end of 1854, contains Latin as well as English Names, and is arranged in accordance with the Second Edition of Yarrell's 'British Birds.' Price 4d. *printed on one side only for Labels*, or 6d. *by Post.* Price 2d. printed on both sides, or 3d. by Post.

London: Edward Newman, Devonshire Street, Bishopsgate; and to be had of Mr. Van Voorst and all Booksellers.

EDWARD NEWMAN, PRINTER, 9, DEVONSHIRE STREET, BISHOPSGATE.